CLAIMS

What is claimed is:

1. A hybrid power converter apparatus, comprising:
a variable speed energy generating device producing differing amounts of power at different speeds;
a hybrid uninterruptible power supply coupled in-line between an AC line and a load, wherein said hybrid uninterruptible power supply is switchably coupled to said variable speed energy generating device, wherein said hybrid uninterruptible power is comprised of a regulator section coupled to an inverter and an energy storage module coupled therebetween.

2. The apparatus according to claim 1, wherein said inverter is selected from the group consisting of: transformerless AC pulse width modulator inverter, DC-AC inverter, static inverter, rotary converter, cycloconverter, and AC-AC motor generator set.

3. The apparatus according to claim 1, wherein the variable speed energy generating device is selected from the group consisting of: internal combustion engine, turbine, micro-turbine and Stirling engine.

4. The apparatus according to claim 1, wherein said regulator section is an enhanced conduction angle dual boost DC bus voltage regulator.

5. The apparatus according to claim 1, further comprising a switch between said inverter and said load.

6. The apparatus according to claim 1, further comprising a switch coupling said hybrid uninterruptible power supply to said AC line.

7. The apparatus according to claim 1, wherein said energy storage module, is selected from the group of devices consisting of: batteries and flywheel.

8. The apparatus according to claim 1, further comprising a bypass switch coupling said AC line to said load.

9. The apparatus according to claim 8, wherein said bypass switch is a bi-directional thyristor.

10. The apparatus according to claim 1, further comprising a bypass switch coupling said variable speed energy source to said load.

11. The apparatus according to claim 10, wherein said bypass switch is a bi-directional thyristor.

12. A method for providing uninterruptible AC power to a load, comprising:
coupling an AC line to a hybrid uninterruptible power supply;
coupling said hybrid uninterruptible power supply to said load, wherein said hybrid uninterruptible power supply comprises a regulator section, an inverter and an energy storage module; and
switchably coupling a variable speed energy source to said hybrid uninterruptible power supply.

13. The method according to claim 12, further comprising feeding the hybrid uninterruptible power supply with said energy storage module.

14. The method according to claim 13, wherein said feeding is derived from a load shed term.

14. The method according to claim 12, further comprising charging said energy storage module while simultaneously providing output power to said load.

15. The method according to claim 12, further comprising steps selected from at least one of the steps consisting of: correcting for sag, correcting for surge, peak shaving, compensating for VAR, active filtering and elimination of active harmonics.

16. A hybrid variable speed generator/uninterruptible power supply device, comprising:

a variable speed generator producing differing amounts of power at different speeds; and

a hybrid uninterruptible power supply coupled in-line between an AC line and a load, wherein said hybrid uninterruptible power supply is switchably coupled to said variable speed generator, and wherein said hybrid uninterruptible power is comprised of a enhanced conduction angle dual boost DC regulator section coupled to an inverter with an energy storage module coupled therebetween.